Susan

DAQC-1323-96

MEMORANDUM

TO: **FILE - THATCHER CHEMICAL COMPANY**

THROUGH: Jeff Dean, Compliance Manager

FROM: Jay Morris, ES

DATE: August 19, 1996

SUBJECT: **THATCHER CHEMICAL COMPANY**, B, NA, Toxics, Salt Lake County, AIRS # 03500119

10892AIR

SS1U/1R

TYPE OF INSPECTION: Complaint, Sulfur Dioxide analyzer audit

DATE OF INSPECTION: August 14, 1996

MULTIPLE INSPECTION SOURCE (yes or no): No

SOURCE LOCATION: 1905 West Fortune Road, SLC / Salt Lake County / Utah

SOURCE CONTACT(S): Bruce Bastian, Industrial Hygienist
Dale Hansen, Environmental Affairs
Gary Hammond, Senior Engineer
Mike Owens, Plant Engineer

OPERATING STATUS: Operating

PROCESS DESCRIPTION: Thatcher manufactures sodium bisulfite, chlorine, bleach, T-Chlor, calcium nitrate, and ferric chloride.

APPLICABLE REGULATIONS: Approval Order dated September 21, 1994

SOURCE INSPECTION EVALUATION:

On Wednesday, August 14, 1996, three Environmental Scientists from The Division of Air Quality (DAQ) performed an audit of the SO2 analyzer on the sulfur dioxide scrubber stack located at Thatcher Chemical. The following is a list of findings during the inspection.

- Thatcher has installed an Interscan analyzer which is used as the Continuous Emissions Monitor (CEM) on the SO2 scrubber stack.
- The analyzer cell has a range of 0-100ppm.
- The analyzer is equipped with a devise to protect the cell from over saturation.
- Thatcher knowingly installed this devise which only allows concentrations of 0 to 25 ppm to enter the cell. The devise was not installed according to 40 CFR 60 App. B Performance Spec. 2 (1.5 times the pollutant level).
- Thatchers emission limitation in condition 19-C of the AO is 50 ppm.
- The data logger was set at 50 ppm. (Any signal greater than the emission limit would not be recorded).
- The data logger was unable to receive a signal from the CEM. (The data logger has never worked correctly).
- Thatcher calibrates the analyzer at 22.9 ppm. If an inspector were to check for a calibration value, it would not be apparent that the monitor is restricted (22.9 is less than the maximum reading of 26 ppm on the

monitor).

The audit consisted of challenging the analyzer with certified EPA protocol gas of 103.9 ppm SO2 (certification documentation is attached). A Tetlar bag was filled with 10 ml of protocol gas. The gas was fed from the bag through an umbilical and into the CEM sampling inlet. Thatchers Bruce Bastian and DAQ's Norm Erikson were observing the analyzer. Bruce read the monitor values out loud and Norm confirmed these readings. The following are the concentrations read on the analyzer during the test. Readings were taken every 30 seconds.

Time	Reading in ppm
11.28.30 a.m.	4.0
11.29.00	3.0
11.29.30	3.5
11.30.00	5.0
11.30.30	9.5
11.31.00	13.0
11.31.30	14.5
11.32.00	17.5
11.32.30	18.5
11.33.00	20.0
11.33.30	21.0
11.34.00	22.0
11.34.30	22.5
11.35.00	23.5
11.35.30	24.0
11.36.00	24.0
11.36.30	24.0
11.37.00	24.5
11.37.30	25.0
11.38.00	26.0
11.38.30	25.0
11.39.00	26.0
11.39.30	26.0

In addition to the monitor audit, Draeger tubes with a range of 20 - 200 ppm SO2 were used to sample the emissions from the stack. The test consisted of leak checking the Draeger tube sampling system and conducting the test of 10 strokes of the sampler, each drawing in 100 ml from the 12 inch stack. Samples were taken at 5", 8", and 3". The sample port used by Thatcher to calibrate the CEM was used to pull the samples. DAQ's Bruce Allen and Norm Erikson pulled these samples. The results were agreed upon by Thatchers Dale Hansen, Bruce Bastian, Gary Hammond and DAQ's Norm Erikson, Bruce Allen and Jay Morris. The results were as follows:

time	reading in ppm	depth into stack
11.45 a.m.	65	5"
12.00 p.m.	35	8"
12.07 p.m.	50	3"

It should be noted that Thatchers calibration system was equipped with flexible tubing (tygon tubing) and did not have a specified location in the stack for calibration samples to be drawn (the tygon tubing is inserted into the sample port and is not secured in any way). It should also be noted that tygon tubing is capable of absorbing some of the emissions and is not an appropriate material to transfer sample gas from the stack to the analyzer.

Furthermore, it was discovered that Thatcher was recording the data from the CEM one time per hour. 40 CFR 60.13(e)(2) requires a CEM to complete a minimum of one cycle (sampling, analyzing, and data recording) for each

successive 15-minute period.

TITLE V SOURCE: No.

EMISSION CAP AND EVALUATION: Thatcher has no emission cap.

EMISSION INVENTORY: Thatcher has never submitted a complete emissions inventory. DAQ's Jon Black is currently processing an NOI for Thatcher and has also not been successful in obtaining this information.

SOURCE INSPECTION SUMMARY EVALUATION: Thatcher has knowingly and willingly installed a device to restrict the flow of SO2 to the analyzer. The analyzer is not capable of reading any concentration over 26 ppm SO2. The data logger does not contain any data from the analyzer and the analyzer has not been installed correctly according to 40 CFR 60 App. B, Performance Specification 2. Thatcher has never conducted a stack test on the SO2 scrubber stack to determine the flow rate (NOV dated April 8, 1996), or pollutant concentration. The range of readings from the Draeger tube samples suggest a possible violation of the 50 ppm SO2 limit in condition 19-C of the AO.

CURRENT RECOMMENDATIONS: Thatcher should be required to conduct a stack test on the SO2 scrubber stack to determine the flow rate and SO2 concentration.

Thatcher should also be issued an NOV for tampering with the CEM and for not complying with 40 CFR 60(e)(2).

RECOMMENDATION FOR NEXT INSPECTION: Thatcher is in the process of obtaining a new AO. Check to see if the AO is issued or not.

ATTACHMENTS: Cylinder gas certification documentation
Order to stack test
NOV

INSPECTORS SIGNATURE: